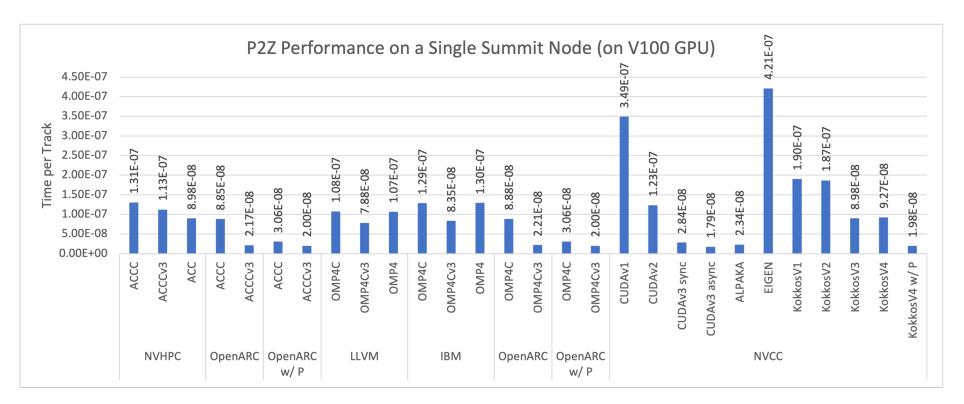
P2Z GPU Version Performance on Summit

Seyong Lee
Oak Ridge National Laboratory
August 15, 2022

P2Z GPU Version Performance on a Summit Node



- ACCC: OpenACC C sync version
- ACCCv3: OpenACC C async version
- **ACC**: OpenACC C++ sync version
- **OMP4C**: OpenMP4 C sync version
- **OMP4Cv3**: OpenMP4 C async version
- **OMP4**: OpenMP4 C++ sync version

- CUDAv1: CUDA unified memory version (no shared memory)
- CUDAv2: CUDA sync version (no shared memory)
- CUDAv3 sync: CUDA V3 sync version
- CUDAv3 async: CUDA V3 async version

Compilers: NVHPC (V22.5), OpenARC (V0.73), LLVM (V15.0), IBM (V16.1.1), and NVCC (V11.0) (w/P: with host memory prepinning) (All CUDA versions are w/P)

- KokkosV1: CUDA unified memory
- **KokkosV2**: same patterns as KokkosV1 but with explicit memory transfers
- KokkosV3: same patterns as CUDAv3 sync but w/o host memory prepinning
- KokkosV4: same patterns as CUDAv3 async version